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EXAMINER				
LIEW, ALEX KOK SOON				
ART UNIT		PAPER NUMBER		
2624				
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/628,286

**Applicant(s)**

AKAHORI, SADATO

**Examiner**

ALEX LIEW

**Art Unit**

2624

**Period for Reply** -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 10 March 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3-6 and 11-14 is/are rejected.
- 7) ☒ Claim(s) 2 and 7-10 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-8508)
- 4) ☐ Interview Summary (PTO-413)
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_
- Paper No(s)/Mail Date \_\_\_\_\_

The examiner withdraws previous rejection; in an updated search, the examiner found Ihara, which read on the current claimed invention.

### ***Claim Objections***

Claims 2 and 7 – 10 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

With regards to claim 2, the examiner cannot find any applicable prior and / or any suggestions disclosing calculating a type reliability value representing *likelihood* of each of the object regions being of the recognized type in combination with the rest of the limitations of claim 2 and all of claim 1.

With regards to claim 7, see rationale for claim 2.

### **DETAILED ACTION**

#### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 3 are rejected under 35 U.S.C. 102(b) as being anticipated by Ihara (US pat no 6,650,776).

With regards to claim 1, Ihara reads on an image processing method comprising:

generating object regions by dividing an image into objects, and generating a plurality of block regions each having a predetermined number of pixels (see figure 3, the logo region is first region and the 7 by 7 code region is the second region) and having a smaller area than any one of the object regions by dividing each of generated object regions (figure 3, the 7 by 7 region is further divided into individual blocks);

recognizing the types of the respective block regions (see column 9, lines 21 to 32, the pixels are either recognized as black or white pixels);

totaling up occurrence frequency of each of the types of the respective block regions in each of the object regions (see figure 13A, S4); and

recognizing the type of each of the object regions based on a result of the totaling (see figure 13B, S14, using the code data, performing verification of code, which requires recognizing the type of code, discussed in column 16, lines 23 to 35).

With regards to claim 3, see the rationale and rejection for claim 3.

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 4 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ihara '776 as applied to claim 3 further in view of Holter (US pat no 4,731,859).

With regards to claim 4, Ihara discloses all the limitations discussed in claim 3, but does not disclose block characteristic quantity extraction, mapping means and type output means. Holter reads on an image processing apparatus according to claim 3, wherein the block region recognition means comprises

block characteristic quantity extraction means for extracting block characteristic quantities from each of the block regions (see figure 5, the blocks extracted contains a predetermined number of pixels based on the sized of the objects);

mapping means for mapping the block characteristic quantities into a two-dimensional space (see figure 6, the image is in two dimension);

type output means having a type distribution map defines the types at respective coordinates in the two-dimensional space, the type output means for outputting the types indicated by the type distribution map at coordinates of the block characteristic quantities mapped in the two-dimensional space as the types of the block regions (see figure 6, each block extracted is its own color, red, green and blue).

One skilled in the art would include type output means because to identify regions which are similar to each other, and see whether these regions are adjacent to each, so these similar adjacent regions are combined to create a ore whole object image; the more

portions of an object image is attached together the more accurate the recognition results will be.

With regards to claim 6, an extension to the arguments to claim 4, Holter discloses an image processing apparatus according to claim 3, wherein the block characteristic quantity extraction means extracts a color (see fig 6 – each block in the image has its own color component), a lightness component (see fig 6 – each pixel in image in fig 6 represents the intensity of the image at the position) and a structural component of each of the block regions as the block characteristic (see fig 6 – each block regions in fig 6 image are rectangles).

5. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ihara '776 as applied to claim 4 further in view of Shiratani (US pat no 6,418,238).

Corset, Ohmae and Holter disclose all of the claim elements / features as discussed above in rejection for claim 4 and incorporated herein by reference, but fail to disclose self-organizing map. Shiratani discloses a two-dimensional space is a self-organizing map wherein neurons having a learning ability are laid out in the form of a matrix (see column 10, lines 33 – 36). It would have been obvious to one having ordinary skill in the art at the time of the invention was made to include self-organizing map to learn because to adapt to multiple different kind of image data to, so the system does not

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require a manual image processing change on the image, where it can be done by the learning system.

5. Claims 11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ihara '776 as applied to claim 1 further in view of Nagarajan (US pat no 7,039,232).

With regards to claim 11, Ihara discloses all the limitations discussed in claim 1, but do not disclose recognizing the type of each of the object regions is determined as the type of the block regions occurring most frequently therein. Nagarajan discloses recognizing the type of each of the object regions is determined as the type of the block regions occurring most frequently therein (see column 2, lines 34 to 42, one with the most predominant tags gets assign a new tag). One skilled in the art would include choosing the most predominant occurrence region in an image because the region type with the most predominant regions is either an object image, or the background of the image, allowing the system identifies areas in the image which is the foreground or background, which improve object detection in an image.

With regards to claim 12, see the rationale and rejection for claim 11.

6. Claims 13 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ihara '776 as applied to claim 1 further in view of Bishop (US pat no 6,603,877).

With regards to claim 13, Ihara discloses all the limitations discussed in claim 1, but do not disclose calculating a type reliability value representing likelihood of each of the object regions being of the recognized type. Bishop discloses calculating a type reliability value representing likelihood of each of the object regions being of the recognized type (see column 2, lines 1 to 15, the preliminary likelihood value is read as type reliability value). One skilled in the art would include calculating a type reliability value because to examiner those higher likelihood values to find if there is any defect areas within the object image or foreground image, which improves quality of the image.

With regards to claim 14, see the rationale and rejection for claim 13.

### **Conclusion**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ALEX LIEW whose telephone number is (571)272-8623. The examiner can normally be reached on 9:30AM - 7:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Bella can be reached on (571) 272-7778. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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6/5/08